

**CAN
YOU**

**PASS
THE**

**PERCEPTION
TEST?**



Sensation & Perception

Modules 16 & 17

Essential Questions

Module 16

- What are the implications of having the ability to attend selectively to stimuli?
- What are the implications of sensory information not getting transformed and delivered to the brain properly?
- Why are thresholds important to our ability to interact with the world around us?
- How does sensory adaptation help people live day-to-day?

Module 17

- What are some benefits and drawbacks of perceptual set?
- How influential is context on our sensation & perception?
- What are the implications of emotions and motivation influencing sensation & perception?

Module 16 – Basic Principles of Sensation & Perception

- Contrast *Sensation* and *Perception*, and explain the difference between *bottom-up* and *top-down* processing.
- Discuss how much information we can consciously attend to at once
- Identify the three steps that are basic to all our sensory systems .
- Distinguish between absolute and difference thresholds, and discuss whether we can sense and be affected by stimuli below the absolute threshold.
- Explain the function of sensory adaptation.

Sensation & Perception

Sensation

- The process by which our sensor receptors and nervous system receive and represent stimulus energies from our environment.



Perception

- The process of organizing and interpreting sensory information, enabling us to recognize meaningful objects and events.



Blend into one continuous process!!

Bottom Up Processing – starts at the sensory receptors and works up to higher levels of processing.

*We process this way when we have no prior knowledge.

Top-Down Processing – constructs perception from the sensory input by drawing on our experiences & expectations (remember stereotyping!)

Selective Attention & Inattention

How much information do we consciously attend to at once?

- Awareness focuses, like a flashlight beam!
- Your other senses are unaware of certain things.
- The *cocktail-party* effect
- **Inattentional blindness** – “blind” to all but a tin sliver of visual stimuli.
- **Change Blindness** – failing to notice changes in the environment.
 - “out of sight, out of mind.”
- **Pop-out** – stimuli that jumps out and grabs our attention.





Transduction

What 3 steps are basic to all our sensory systems?

- **Receive** sensory stimulation, often using specialized receptor cells
- **Transform** that stimulation into neural impulses
- **Deliver** the neural information to our brain

Transduction = the process of converting one form of energy into another that your brain can use.

Psychophysics = study of relationships between the characteristics of stimuli.



I knew you were trouble when you walked in

Nope. Hindsight Bias

Thresholds

Absolute Thresholds

- The minimum stimulation necessary to detect a sense.
 - 50% of the time!
- Depends on signal's strength & psychological state.
- **Signal detection theory** predicts when we will detect weak signals.
 - Try to understand why people respond differently to the same stimuli & why people's reactions vary as circumstances change.
- **Subliminal** – below your absolute threshold.
- An unnoticed image or word can reach your visual cortex and briefly **prime** your response to a later question.

To function effectively, we need absolute thresholds LOW enough to allow us to detect important senses & to detect small differences among stimuli!

Difference Thresholds

- The minimum difference a person can detect between any two stimuli half the time.
- Increases with size of stimuli
- **Weber's Law** – For an average person to perceive a difference, two stimuli must differ by a constant minimum percentage.
 - The exact proportion varies, depending on the stimuli.

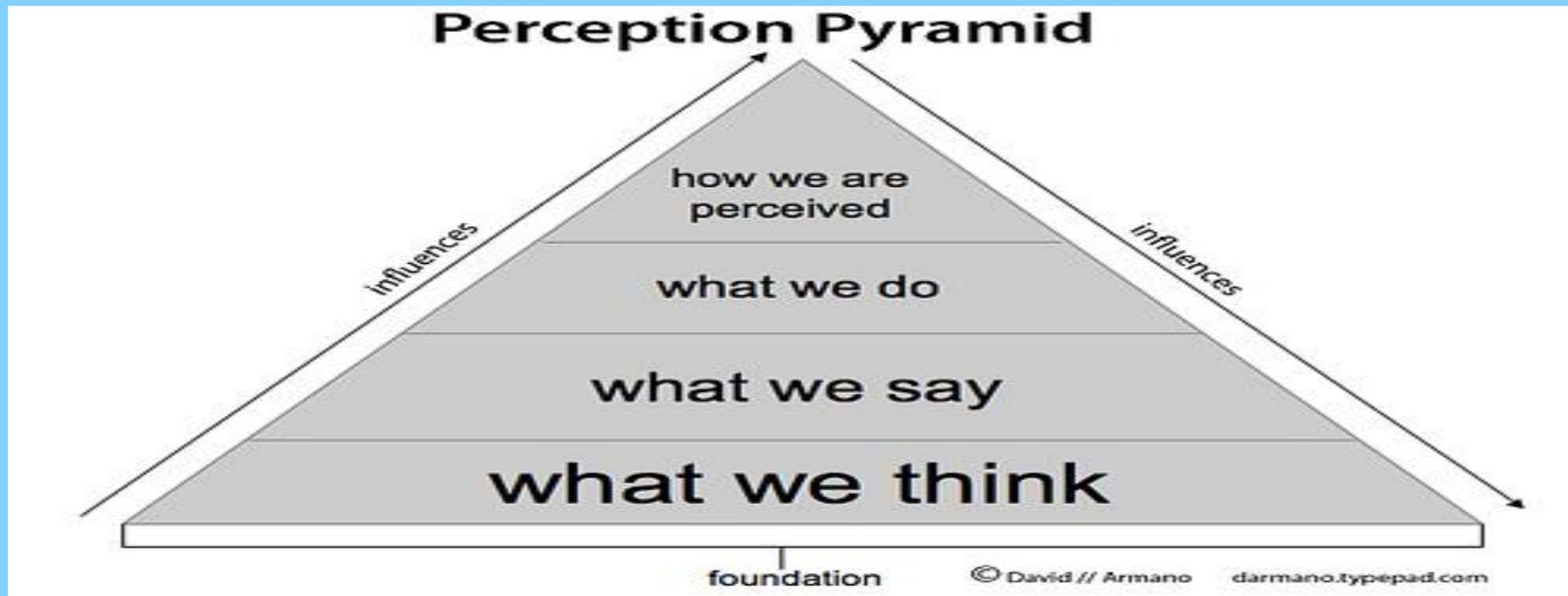
Sensory Adaptation - What is it's function?

- Diminished sensitivity as a consequence of constant stimulation.
 - Our nerve cells fire less frequently bc our stimuli doesn't change.
- Sensory adaptation reduces our sensitivity
- Allows us the freedom to focus on informative changes in our environment without being distracted by background chatter.
- *"We perceive the world not exactly as it is, but as it is useful for use to perceive it"*
- Influences our emotions.

Remember: "Much of what we perceive comes not just from what's "out-there" but also from what's behind our eyes and between our ears."

Module 17 – Influences on Perception

- Explain how our expectations, contexts, emotions, and motivation influence our perceptions.
- List the claims of ESP, and discuss the conclusions of most research psychologists after putting these claims to the test.



Biological influences

- entry-level sensory analysis
- unlearned visual phenomena
- critical period for sensory development

Psychological influences

- selective attention
- learned schemas
- Gestalt principles
- emotional context effects
- perceptual set

Perception:
Our version
of reality

Social-cultural influences

- cultural assumptions and expectations
- physical context effects

Perceptual Set

- A set of mental tendencies and assumptions that greatly affects what we perceive.
 - Top-Down
- Influences what we hear, taste, feel, & see
- Once we have formed a wrong idea about reality, we have more difficulty seeing the truth.
- Determined by experiences formed that organize and allow us to interpret unfamiliar information.

Context Effects

TAE CAT

READ

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Perceptions

Emotion & Motivation

- Both clearly influence how we perceive sensations!
- Motives also play a major role.
 - They direct our perception of ambiguous images.
- Our emotions can color our social perceptions, too.



ESP – Perception without Sensation?

Read pages
167 – 169

TEDx

On your own paper.....

- You are enjoying a dinner with your family at a restaurant. A large group of people enter singling and talking loudly. The people continue this throughout the restaurant.
- How do you perceive this situation and explain this group's behavior?
- Use you knowledge of expectations/set, context, emotions, and motivations to construct your response.
- Place in the tray when completed and work on your book notes! 😊